

an inert gas supply unit for providing inert gas to the reactor;
an exhaust pump for exhausting gas from the reactor;
an ozone generator for generating ozone to react with the reaction gas;
a first ozone transfer unit for receiving the ozone from the ozone generator to provide the reactor with ozone to be used for a thin film deposition on the wafer, wherein the ozone and the reaction gas are provided into the reactor at respective times different from each other;

an ozone control unit connected to the ozone generator in parallel with the first ozone transfer unit, for receiving the ozone from the ozone generator to allow a certain amount of ozone to flow to the first ozone transfer unit by removing an excessive amount of ozone generated by the ozone generator;

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a first selection valve connected between the first ozone transfer unit and the reactor, for controlling a flow of the ozone from the first ozone transfer unit to the reactor; and

a second selection valve connected between the first ozone transfer unit and the exhaust pump, for controlling a flow of the ozone from the first ozone transfer unit to the exhaust pump, wherein the first and second selection valves perform opposite operations at a same time.

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2. (Twice Amended) The semiconductor thin film deposition apparatus of claim 1, further comprising a main valve disposed between the ozone generator and the first ozone transfer unit, for controlling a flow of the ozone from the ozone generator to the first ozone transfer unit.

3. (Amended) The semiconductor thin film deposition apparatus of claim 2, further comprising a second ozone transfer unit for receiving the ozone from the ozone generator to provide the reactor with ozone to be used for a thermal treatment on the wafer, wherein the second ozone transfer unit is connected to the ozone generator via the main valve in parallel with the first ozone transfer unit and the ozone control unit, wherein the ozone control unit allows a certain amount of ozone to flow to the second ozone transfer unit by removing an excessive amount of ozone generated by the ozone

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generator, and the main valve controls a flow of the ozone from the ozone generator to the second ozone transfer unit.

6. (Amended) The semiconductor thin film deposition apparatus of claim 3, wherein the first ozone transfer unit comprises:

B2 a first ozone transfer valve having an inlet connected to an outlet of the main valve of which inlet is connected to an outlet of the ozone generator;

a first mass flow controller having an inlet connected to an outlet of the first ozone transfer valve, for controlling a flow rate of the ozone to be used for the thin film deposition on the wafer; and

a second ozone transfer valve having an inlet connected to an outlet of the first mass flow controller and an outlet generating the ozone to be used for the thin film deposition to the first and second selection valves.

7. (Amended) The semiconductor thin film deposition apparatus of claim 6, wherein the second ozone transfer unit comprises:

S227 a third ozone transfer valve having an inlet connected to the outlet of the main valve;

a second mass flow controller having an inlet connected to an outlet of the third ozone transfer valve, for controlling a flow rate of the ozone to be used for the thermal treatment on the wafer; and

a fourth ozone transfer valve having an inlet connected to an outlet of the second mass flow controller and an outlet generating the ozone to be used for the thermal treatment to the first and second selection valves.

8. (Amended) The semiconductor thin film deposition apparatus of claim 7, wherein the first mass flow controller controls the flow rate of the ozone to be used for the thin film deposition in a range from about 100 sccm to about 500 sccm.

9. (Amended) The semiconductor thin film deposition apparatus of claim 8,
wherein the second mass flow controller controls the flow rate of the ozone to be used for
the thermal treatment in a range from about 100 sccm to about 20000 sccm.

10. (Amended) The semiconductor thin film deposition apparatus of claim 7,
wherein the ozone control unit comprises;

an automatic pressure valve connected to the ozone generator in parallel with the
main valve, for being automatically opened to receive the ozone from the ozone generator
when pressure of the ozone generated from the ozone generator is equal to or greater than
a predetermined value; and

an ozone remover for receiving and removing ozone which has passed through the
automatic pressure valve.

11. (Twice Amended) The semiconductor thin film deposition apparatus of claim
10, wherein the ozone control unit further comprises a check valve connected between
the main valve and the ozone remover, for allowing the ozone passing through the
automatic pressure valve to flow only toward the ozone remover when pressure of the
ozone generated from the ozone generator is equal to or greater than the predetermined
value.

12. (Amended) The semiconductor thin film deposition apparatus of claim 7,
further comprising a heater for providing heat to perform the thermal treatment on the
wafer in the reactor.

13. (Amended) The semiconductor thin film deposition apparatus of claim 12,
wherein the heater provides the heat at a temperature in a range from about 300 °C to
about 700 °C.

14. The semiconductor thin film deposition apparatus of claim 1, wherein the inert
gas is argon.

15. (Amended) The semiconductor thin film deposition apparatus of claim 7, wherein the first ozone transfer unit provides the ozone to the reactor at a first flow rate in the thin film deposition process, and the second ozone transfer unit provides the ozone to the reactor at a second flow rate in the thermal treatment process.

B3 16. (Amended) The semiconductor thin film deposition apparatus of claim 1, wherein the inert gas supply unit provides the inert gas into the reactor at a time between when the reaction gas supply unit provides the reaction gas into the reactor and when the first ozone transfer unit provides the ozone into the reactor.

Please add the following new claims 17-19:

17. (New) The semiconductor thin film deposition apparatus of claim 7, wherein the first selection valve has an inlet connected to both the outlets of the second and fourth ozone transfer valves and an outlet connected to an inlet of the reactor, and the second selection valve has an inlet connected to both the outlets of the second and fourth ozone transfer valves and an outlet connected to the exhaust pump.

B4 18. (New) The semiconductor thin film deposition apparatus of claim 7, wherein the first ozone transfer valve and the third ozone transfer valve are controlled to be selectively opened so that the ozone from the main valve is provided to the reactor through one of the first and second ozone transfer units.

19. (New) The semiconductor thin film deposition apparatus of claim 11, wherein the automatic pressure valve has an inlet connected to the outlet of the ozone generator and an inlet of the main valve, the ozone remover has an inlet connected to an outlet of the automatic pressure valve, and the check valve is connected between the outlet of the main valve and the inlet of the ozone remover.
